

REMARKS

With entry of the present amendment the application will contain claims 1-18 all of which are under examination.

Support

Support for the particle diameter limitation added to claim 1 can be found in the specification as filed on page 9 in the second full paragraph.

Support for the proportion of binding agent added to claim 1 can be found in the specification as filed on page 10 in the second full paragraph.

Newly added claims 17 and 18 are identical except for their dependency. Support for these claims can be found in the specification as filed on page 4 at line 1 and elsewhere.

Double Patenting Issues

The provisional¹ double patenting rejections in paragraphs 1-3 of the last office action are traversed but have been rendered moot by the present amendments to the claims.

¹ On page 4 at line 15 and on page 6 at line 20 of the last Office Action, the Examiner indicates that both double patenting rejections are "provisional".

Issues Under 35 USC 103

The rejection of all pending claims as obvious under 35 USC 103 is traversed for the reasons stated below. It would not be obvious to the skilled artisan to choose a carbon powder having the claimed particle diameter. Neither would it be obvious to the skilled artisan to choose a bulk density within the scope of that claimed. Not only would it not be obvious to combine the cited references, these references suggest the contrary.

The following sentence appears in the Office Action on page 9, lines 18-20:

"The JP '724 publication discloses spherical granular carbon powder and its production; wherein the spherical granular carbon powder has an average particle diameter of 1-1000 μ m (ABSTRACT)."

However, the JP '724 publication discloses the following subject matter in the abstract:

"This spherical conjugate granular powder consists of magnetic granular powder, a thermoset resin and carbon formed by carbonizing a part of the thermoset resin, and has an average particle diameter of 1-1000 μ m." [Emphasis supplied]

The conjugate granular powder is not a carbon particle but a composite particle consisting of a magnetic powder, a thermosetting resin, and carbon powder. Further, the average particle diameter does not mean the diameter of a carbon particle but rather means a

composite particle. The JP '724 publication is therefore silent about a spherical or massive carbon powder having a mean particle diameter of 150 to 500 μm as required in all pending claims.

Emanuelson et al. disclose a graphite powder having a mean particle size of about 74 to about 100 μm in view of 50% of cumulative weight as shown in Figure 2. Emanuelson et al. are therefore silent about a spherical or massive carbon powder having a mean particle diameter of 150 to 500 μm as required in all pending claims.

Even though the cited references disclose a spherical or massive carbon powder having a mean particle diameter of 150 to 500 μm , those skilled in the art cannot arrive at the inventive separator containing the carbon powder. The reason why they cannot arrive at the present invention resides in the following sentence in Saito et al.:

"When the average particle diameter is larger than 100 μm , electrical contact is low between the particles of the powdery carbon filler or between the powdery carbon filler and the short fiber, which may make high the electrical resistance of the resulting separator." (Saito et al. [0023]).

US 2002/0068210 A1, Saito et al., states that the separator does not adopt a carbon powder having a mean particle diameter of larger than 100 μm .

Therefore, those skilled in the art cannot combine Saito et al. with the other references, i.e., the JP '724 publication, that disclose a carbon powder having a mean particle diameter of larger than 100 μm .

The claimed bulk density further distinguishes over the cited references. In the last Office Action at page 13, lines 4-5, the following appears:

"Takahashi et al. disclose the use of carbon powder molded articles having a bulk density of 0.90 g/cc for electrochemical applications (Col. 12, lines 15-24)."

However, it is clear that the bulk density of Takahashi et al. is not a density of carbon powder but rather is the density of the molded articles. Takahashi et al. are silent about a spherical or massive graphite having a bulk density higher than 0.6 g/ml.

At any event, those skilled in the art cannot easily arrive at the present invention from the cited patents.

CONCLUSION

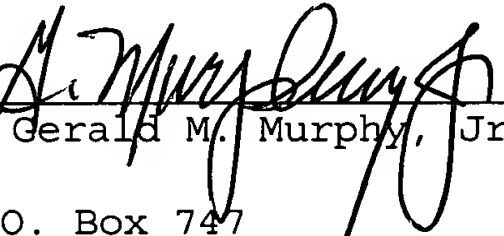
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact David R. Murphy (Reg. No. 22,751) at the telephone number of the undersigned below, to conduct an interview

in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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